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BOTULISM

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ABSTRACT: This is a popularized article describing the botulism bacilli and botulinus toxin, the conditions under which they flourish and symptoms of botulism. It emphasizes that the toxin is destroyed by heating to boiling for a few minutes, that home-canned foodstuffs and poached fish are the predominant sources of botulinus toxin and that botulism is insidious, in that it rarely changes the appearance, taste or smell of food and that most symptoms are common to other types of poisoning, particularly alcoholic. It also stresses that double vision and disruption of swallowing are signs for immediately seeing a doctor.

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The holiday table was a joy to behold: appetizers, wine, fruits. But the best items, of course, were the homemade preserves, smoked foods, salads and hot dishes. The guests tried everything, they praised everything, but they particularly noted the tenderness, taste and aroma of the home-canned mushrooms.

But the next day, one of the guests became ill. He complained of nausea, weakness and dryness in the mouth.

"Pay no attention to it," friends said, "This is because you overate yesterday. We feel the same. You are not the only one suffering from excessive gluttony."

However, after a few hours a haze and double vision appeared in the victim's eyes. The advice of the omniscient friends did not help here, and he had to go to the doctor. And then, the terrible word was spoken, "botulism."

It is terrible, because botulism is one of the forms of severe food poisoning. Nowadays, it is caused most often by home-canned foodstuffs, primarily mushrooms.

Several people became ill, after the ill-fated evening party described above. The culprits in the poisoning evidently were the mushrooms. One would

think the cause was found. But this sort of fact perplexed the doctor. One patient, who was a member of this party, stubbornly reiterated:

"I did not eat the mushrooms at all, I can't stand them."

If she did not eat the mushrooms and, nevertheless, was poisoned, this happened from some other foodstuffs.

"Tell me in more detail what you ate."

"Only two tomatoes and a piece of sausage, which my son cut off with his fork and made me put on the plate."

"And your son ate mushrooms?"

"Yes. Unlike me, he loves them."

After two days, the laboratory gave the answer: Botulinus toxin was found in the mushrooms. Imagine what strength it must have. for someone else's fork to transfer a negligible amount of it from the mushrooms to the sausage and cause severe poisoning.

The botulism bacilli, which manufacture this toxin, are widespread in nature. Their permanent habitat is the soil. In home canning, it is possible to heat the foodstuffs in the cans to only 100°. Therefore, favorable conditions are created for germination of the spores of the botulinus bacilli. In storage of the canned foods in hermetically sealed cans, without access to air, these bacilli form a lethal toxin. Its strength exceeds that of all other bacterial toxins and chemical poisons. One gram of it is enough to poison a hundred million persons. Fortunately, botulinus toxin does not accumulate in foodstuffs in such quantities, but a minimum presence of it is a great danger.

It should be noted that heating to 100° destroys the toxin in a few minutes.

Statistics indicate that for every other person poisoned by botulinus toxin, the culprits prove to be home-canned mushrooms, for every sixth, self-prepared salted and dried fish and, for every sixth, home-canned vegetables. For the remainder, it is canned and smoked fruits and pork, prepared at home.

. . . a woman entering the hospital in serious condition did not wish to say what she had eaten. But it was necessary to know the possible source of the botulism. It could poison others. Influenced by the weighty arguments, the young woman reported that she had eaten smoked omul, caught by poachers and bought "under the counter" by her husband. Almost all fish sold was found in individual cellars and refrigerators, fortunately untouched. It was being stored for the forthcoming holiday. However, those who tried the "noble" fish paid dearly for it.

It has been noted that fish, especially cartilaginous and sturgeon, obtained by poachers, frequently become the cause of poisoning. It is simple to explain this: the botulinus bacilli develop readily and give off botulinus toxin in precisely the fish, which are injured by those barbaric catching methods which poachers use.

Botulism is a serious and insidious disease. Its seriousness is determined by the fact that the poison strikes the most sensitive system of the human body, the nervous system, and a fatal outcome of the poisoning is most likely. It is insidious, in that vomiting and stomach disorders, which usually are symptoms of any poisoning occur rarely in botulism, and the temperature hardly rises. This is why some initially attribute no importance to their weakness, dryness of the mouth, hoarseness of the voice and haze before the eyes, the more so, if they had drunk liquor the evening before. However, in such cases, if double vision or difficulty in swallowing developed, the doctor should be called immediately!

The consciousness of a person poisoned by botulinus toxin remains clear and the increasing seriousness of his condition forces those around him to reject the first, erroneous thought of drunkenness.

The insidiousness of botulism is that the poison, with rare exceptions, changes neither the appearance, the taste nor the odor of food.

Botulinus toxin becomes the culprit of unexpected everyday tragedies. A young man who likes to live it up dies of poisoning. The wife deserts the husband struck down by this poison without help, thinking that he is drunk. Anything is possible. However, if you please, the most serious thing, and particularly for a doctor, is the impossibility of helping a man who could have been saved if he had come in time.